MEDICAL THREAT BRIEF

Department of Preventive Medicine

V1.00

BACKGROUND

Historical accounts of wars, battles, and military training consistently relate that the greatest loss of forces was not caused by combat wounds – rather the majority of losses were the result of disease and non-battle injury (DNBI)[2].

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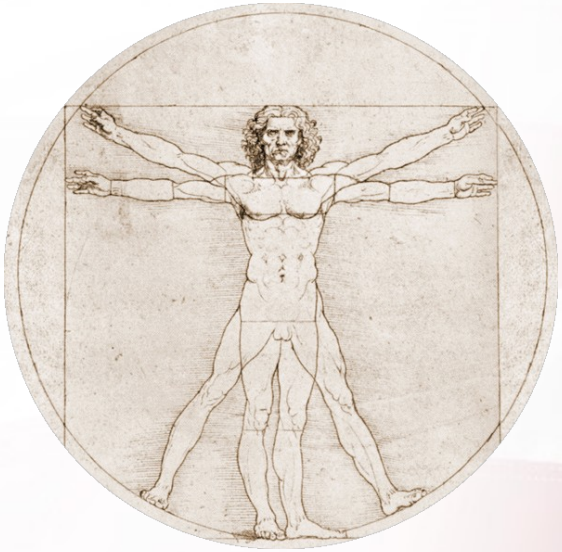
MEDICAL THREAT



- Personal Health
- Endemic Diseases
- Occupational Threat
- Environmental Threat
- Non-Battle Injuries/Operational Safety
- Operational Stress

PREVENTIVE MEDICINE COUNTERMEASURES

- Medical Tests – All Personnel
  - PPD – Purified Protein Derivative (TST – Tuberculin Skin Test)
    - Within 12 months prior to deployment
    - **AND** At time of redeployment
    - **AND** Again between 3-6 months after redeployment
  - HIV – Human Immunodeficiency Virus
    - Within 6 months prior to deployment
  - G6PD - Glucose-6-Phosphate Dehydrogenase
    - Prior to taking Primaquine (anti-malarial drugs are contra-indicated for G6PD deficient individuals)

IMMUNIZATION REQUIREMENTS

- All Personnel
  - Hepatitis A
  - Typhoid
  - Tetanus-diphtheria
  - Yellow fever
  - Meningococcal
  - Influenza
  - Measles, Mumps, Rubella (MMR)
  - Polio

- Selected Personnel
  - Hepatitis B (medics, MPs, firefighters, combat lifesavers)
  - Rabies (occupational risk of exposure)
  - Pneumococcal (asplenic personnel)
  - Anthrax (as directed from higher)

Your medical authority will confirm requirements in OPORD

MALARIA CHEMOPROPHYLAXIS

- Chemoprophylaxis (*when required*)
  - If you are prescribed chemoprophylaxis
    - The type of drug prescribed by your health care provider will be based on the area/country you are deploying to and other factors
- Does not take place of PPE an[illegible] DOD Arthropod Repellant Syst[illegible]

FIELD SANITATION TEAM

- Field Sanitation Teams (FST) train service members in Preventive Medicine Measures (PMM) and advise the commander and unit leaders on implementation of unit-level PMM.
- Know who the members of your Field Sanitation Team are PRIOR to deployment
- The FST can assist in preventing medical threats to your health

Failure to apply the principles of PMM can result in mission failure

GUIDE TO STAYING HEALTHY GTA 08-05-062

- Unfold YOUR *Guide to Staying Healthy*, Graphic Training Aid - GTA 08-05-062

This guide is for use by all active/reserve component military, civilian, retiree, and contractor personnel. Any individual who trains and prepares for, or participates in any type of military operation should keep and refer to this guide.

PERSONAL PROTECTIVE MEASURES

- Wash hands frequently
- Bathe/shower regularly (field expedients will do); use unscented products
- Wear shower shoes to prevent athlete's foot
- Sleep head-to-toe if billeted in common areas
- Wear clean, dry uniforms; change socks daily and uniform at least weekly
- Do not wear nylon or silk undergarments; cotton undergarments are more absorbent and allow the skin to dry

SEXUAL ACTIVITY

- Abstinence is the only 100% effective method for preventing sexually transmitted diseases
- Choose an effective method of birth control
  - **Always use condoms during sex** – regardless of other measures you choose. Using latex con ring ea al encounter provi oved %) prevention agai s and cy.

ORAL HEALTH

- Deploy with:
  - Toothbrush
  - Dental Floss
  - Fluoride Toothpaste

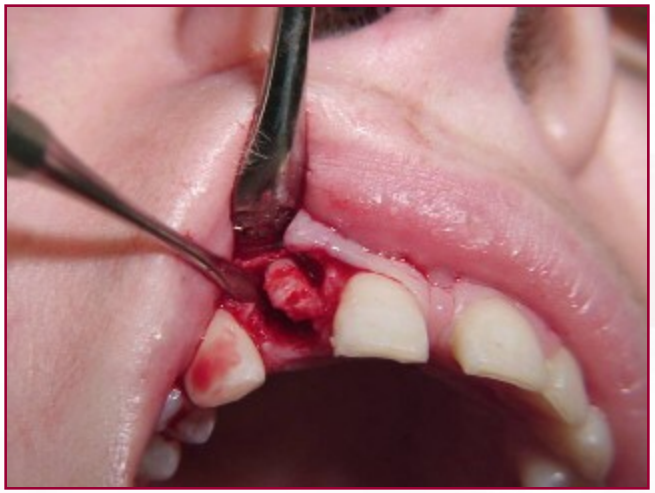
- Brush twice-daily
  - Daily In difficult tactical environments
- Floss daily
- Seek medical attention at the onset of any dental problems

MOUTH GUARDS

Use Them

OR

Lose Them



Especially when playing contact SPORTS

SPIRITUAL HEALTH

- Maintain personal prayer/meditation
- Obtain and read wholesome religious/spiritual literature
- Attend religious/spiritual group discussions/studies
- Process anger, fear, anxiety & guilt through personal & group spiritual/religious activities
- Keep in touch with spiritual advisors/chaplains

NUTRITION

- Drink fluids continuously (hourly fluid intake should not exceed 1 1/2 quarts)
- Maintain weight; do not avoid food or attempt weight loss during a deployment
- Work in cold weather can increase energy needs by 10-25%
- Operations in high-altitude areas can increase energy needs by 50% or more

IMPROVE RESISTANCE TO STRESS

- Fear and physical signs or symptoms of stress are normal reactions before and during combat or other dangerous/life-threatening situations
- Talk about what is happening with your buddies
- Learn ways to relax quickly
- Quickly integrate new replacemer
- If you must join a new group, be active in establishing friendships
- Give each other moral support
- Care for your buddies and work together

CARBON MONOXIDE

- Carbon monoxide (CO) is a colorless, odorless, and tasteless gas produced by engines, stoves, and gas/oil heaters.
- CO replaces oxygen in the body, and can cause headaches, sleepiness, coma, and death.

COUNTERMEASURES

- **Keep sleeping area windows slightly open for ventilation and air movement.**
- DO NOT sleep in vehicles with the engine running or use engine exhaust for heat.
- DO NOT park vehicles near air intakes to tents, trailers, or environmental control units.

Do not use unapproved commercial off-the-shelf heaters.

COLD INJURY PREVENTION

- Hypothermia, Frostbite, Chilblains

COUNTERMEASURES

- When possible, remain inside warming tents/buildings and drink warm, uncaffeinated liquids for relief from the cold
- If working outside or on guard duty, insulate yourself from the ground and wind. Rotate duty as frequently as mission allows.
- Properly wear the Extended Cold Weather Clothing System

You should receive annual unit training on prevention of cold injury

COLDER

C: Keep clothing **C**lean.

O: Avoid **O**verheating.

L: Wear clothing **L**oose and in layers.

D: Keep clothing as **D**ry as possible.

E: **E**xamine clothing for holes, tears, and broken fasteners.

R: **R**epair or replace damaged clothing

Notify your first-line supervisor if you have had a previous cold injury. Use the buddy system.

WIND CHILL TEMPERATURE

Wind Speed (mph) ↓	Air Temperature (°F)																
	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95

Wind speed based on measures at 33 feet height. If wind speed measured at ground level multiply by 1.5 to obtain wind speed at 33 feet and then utilize chart.

RISK OF FROSTBITE

GREEN – LITTLE DANGER (frostbite occurs in >2 hours in dry, exposed skin)
YELLOW – INCREASED DANGER (frostbite could occur in 45 minutes or less in dry, exposed skin)
RED – GREAT DANGER (frostbite could occur in 5 minutes or less in dry, exposed skin)

Wet skin can significantly decrease the time for frostbite to occur

HEAT INJURY PREVENTION

- Heat Cramps, Exhaustion, or Stroke

COUNTERMEASURES

- Drink fluids continuously (hourly fluid intake should not exceed $1^{1/2}$ quarts, daily fluid intake should not exceed 12 quarts)
- Maintain acclimatization
- Protect yourself from exposure to sunlight and wind
- Maintain good physical condition
- Establish work/rest schedules
- Wear proper clothing
- Participate in training

You should receive annual unit training on prevention of heat injury. Heat injuries are preventable!

HEAT INJURY PREVENTION

Fluid Replacement Guidelines for Warm Weather Training

(Applies to average heat acclimated soldier wearing BDU, Hot Weather)

Heat Category	WBGT Index, ^{0}F	Easy Work		Moderate Work		Hard Work	
		Work/Rest	Water Intake, Qt/hr	Work/Rest	Water Intake, Qt/hr	Work/Rest	Water Intake, Qt/hr
1	78-81.9	NL	1/2	NL	3/4	40/20 min	3/4
2 (Green)	82-84.9	NL	1/2	50/10 min	3/4	30/30 min	1
3 (Yellow)	85-87.9	NL	3/4	40/20 min	3/4	30/30 min	1
4 (Red)	88-89.9	NL	3/4	30/30 min	3/4	20/40 min	1
5 (Black)	>90	50/10 min	1	20/40 min	1	10/50 min	1

- The work rest times and fluid replacement volumes hydration volumes will sustain performance for at least 4 hours of work in the specified heat category. Individual water needs will vary approx ¼ qt or 8 ounces per hour.
- NL=no limit to work time per hour.
- Rest means minimal physical activity (sitting or standing), accomplished in shade if possible.
- **CAUTION: Hourly fluid intake should not exceed $1^{1/2}$ quarts.**
  Daily fluid intake should not exceed 12 quarts.
- Wearing body armor adds 5 degrees Fahrenheit to WBGT Index
- Wearing MOPP overgarment add 10 degrees Fahrenheit to WBGT Index.

SAND, DUST, AND WIND

- Sand, wind, and dust cause health problems, particularly to skin, eyes, throat and lungs
- High winds create flying object hazards which may not be visible in blowing sand or dust
- Wash daily, especially body areas that collect dust and sand
- Protect lips with lip balm and use moisturizing skin lotion on your hands to prevent cracked, chapped fingers
- Shield your face with cloth materials to protect from blowing dust and sand

Contact lenses should not be worn

HIGH ELEVATIONS

- High Altitude-elevations over 6,000 feet
  - High Altitude illnesses can kil
  - **Stage ascents over time**
  - Environmental conditions are more severe at higher elevations
    - Lower oxygen levels (“thin air”)
    - Colder temperatures, high winds, low visibility
  - Remain well hydrated

Be observant of the common symptoms of mountain sickness: headache, nausea, vomiting, dizziness, fatigue, irritability, and coughing. Seek medical attention immediately in you experience any of these symptoms

FOODBORNE AND WATERBORNE DISEASES

- Diarrhea
- Cholera
- Hepatitis A and E
- Typhoid Fever
- Chemicals/Pesticides
- Heavy Metals

COUNTERMEASURES

- **Do not consume any food, ice, water, or beverage (to include bottled water) that have not been approved by the U.S. military**
- Assume all non-approved food, ice, and water is contaminated

Even a one-time consumption of these foods or water may cause severe illness

FOOD CONTAMINATION

- Metals
  - Arsenic
  - Chromium
  - Cadmium
  - Lead
- Pesticides
- Insecticides
- Fertilizers

- Industrial chemical runoff
- Hazardous waste dumping
- Untreated sewage
- Human waste
- Animal waste

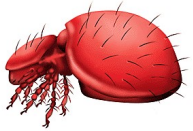
VECTOR-BORNE THREATS

Sand Flies

Mosquitoes

Fleas

Ticks



Chigger Mites

Lice

Not to scale

PERSONAL PROTECTIVE MEASURES

Permethrin On Uniform

+

DEET On Exposed Skin

+

Properly Worn Uniform

MAXIMUM PROTECTION

DOD Insect Repellent System

YOU NEED TO KNOW…

Dry cleaning removes permethrin from the uniform

INSECT REPELLENTS FOR SKIN AND CLOTHING

DEET lotion

NSN 6840-01-284-

- Apply a thin coat to EXPOSED skin
- One application lasts up to 12

Permethrin

- Individual Dynamic Absorption Kit (IDA)
- Treatment lasts for life of the uniform

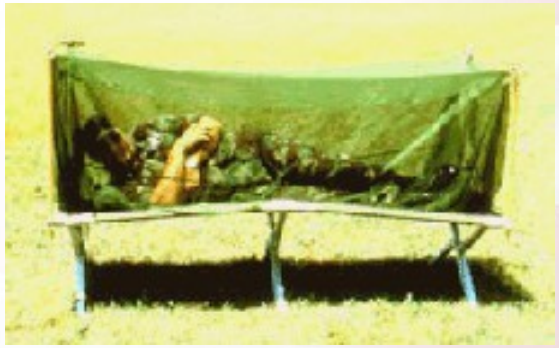
NSN 6840-01-345-0237

NSN 6840-01-278-1336

- Aerosol spray can
- Treatment lasts through 5-6 washes

OTHER INDIVIDUAL COUNTERMEASURES

- Wash and inspect your body for insects/ticks and bites daily
- Use buddy system to check clothing routinely
- Launder uniform routinely to remove insects and eggs
- Use a bed net while sleeping
  - Spray the outside of the net with permethrin
  - Tuck edges under cot or sleeping bag
  - Don’t let net touch your skin while you sleep



HAZARDOUS ANIMALS AND PLANTS

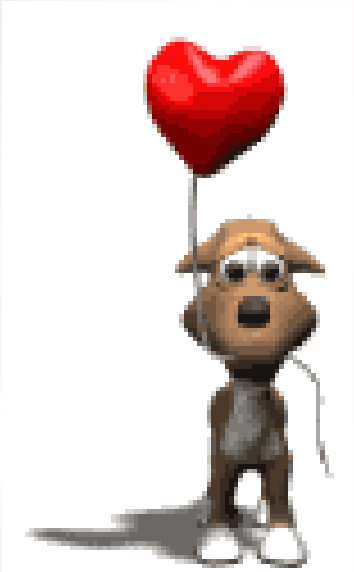
- Rabies: wild dogs, cats, bats,and other animals
- Hantavirus: infected rodent feces and urine
- Ticks, fleas, mites: carried by rodents
- Rodents: contaminate food, damage equipment
- Freshwater fish: electroshock and feed on human flesh

- Lance-Headed Vipers, Coral Snakes, Rattlesnakes
- Bees (including Africanized), wasps, hornets, ants, a caterpillars
- Spiders, centipedes, and scorpions

- **Plant resins cause contact dermatitis**
- **Poisonous roots, stems, leaves, and fruit**
- **Weeds and stinging nettles**
- **Thorny shrubs and trees**

HAZARDOUS ANIMALS AND PLANTS

- Mongrel the Mangy Mascot is not permitted
- No Critter Combat games, spider vs. scorpion battles, et

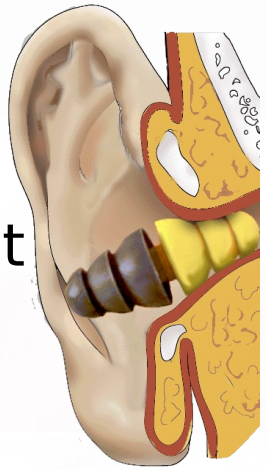


HEARING CONSERVATION

- Loud noise causes permanent hearing loss

COUNTERMEASURES

- Have your hearing protection with you at all times and use it
- Be sure your ear plugs, noise muffs or helmets fit properly and are in good condition
- Avoid noise or limit time around noise to only critical tasks



Combat Arms Earplug

NSN 6515-01-466-2710

Authorized wear

IAW AR 670-1

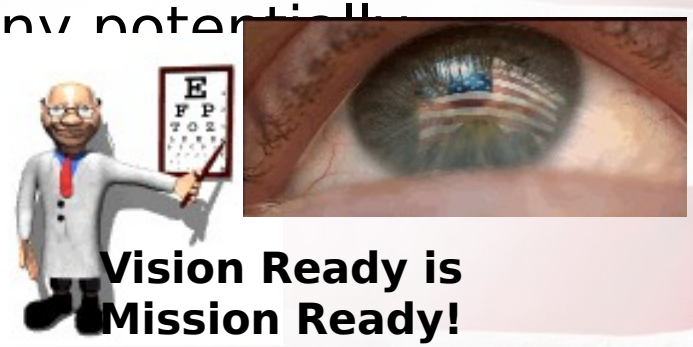
If you have to raise your voice to be understood, it is too noisy.

Put on hearing protection.

VISION CONSERVATION

- **Preventive Measures and Eye Protection**
  - Contact lens use is prohibited for use in environments where exposure to smoke, toxic chemical vapors, sand, or dust occurs
  - If required, maintain 2 pair of glasses and 1 protective mask insert
  - Use eye protection when in any potentially eye hazardous environment
    - Safety goggles or spectacles with side shields*
    - Chemical splash goggles*

*(ANSI Z87.1 approved)



HAZARD ASSESSMENT TOP THREE

#1 Vehicle Accidents

Congested roads, speeding and fog. Civilian vehicles on roads increases risks.

Slips, trips, and falls. Surfaces create hazards. Injuries to hands, forearms, and shins.

#2 Personal Injuries

#3 Fires

Improper re-fueling and unattended fuel heaters increase the risk of fire in tents.

MOTOR VEHICLE ACCIDENTS

- Motor vehicle accidents
  - Driver Qualifications
  - Maintenance
  - Ground Guides
- Special Precautions
  - Night/Night Vision Device Operations
  - Convoy Operations
  - Refueling Operations
  - Sand/Dust Storms and Fog

The most common cause of serious non–battle injuries and death. All personnel have a duty to intervene in the careless operation of a vehicle.

DEPLETED URANIUM (DU)

- Depleted uranium (DU) is used in armor-piercing munitions and in enhanced tank armor protection
- DU is a heavy metal that is slightly radioactive. Can cause adverse health effects if it enters your body (inhaled, ingested, fragments).

COUNTERMEASURES

- Receive Depleted Uranium Awareness Training
- Assume a DU contamination zone of 50 meters around actively burning fires involving any armored combat vehicles
- As with all battlefield debris-do not touch or move the object
- Notify authorities of the location of any debris
- Exercise standard field hygiene, to include washing hands and face
- No additional protective measures are required for handling unfired DU munitions other than those required for all munitions

UNEXPLODED ORDNANCE

- No souvenirs
- Do not touch, can explode at any time

Contact the MPs or EOD if found

ENVIRONMENTAL CONSIDERATIONS

- Hazardous Materials
- Hazardous Waste
- Medical Waste
- Refueling Points
- Spill Response
- Wastewater Discharge
- Decon Sites

- Latrines
- Burn pits
- Laundry and Bath
- Fuel Storage
- POL Storage
- Generators
- Special Wastes
- Burial Sites

ENVIRONMENTAL POLLUTION (Air, Water, Soil)

- Location of Pollution Sources
  - Burning or Damaged Buildings
  - Open Burning/Waste Disposal
  - Vehicle/Generator Exhaust

- Contaminants
  - Dust, Silica, Asbestos, Lead
  - Organic Vapors and Orga
    Gases

- Industrial Facilities

Contact Preventive Medicine with

TOXIC INDUSTRIAL CHEMICALS / MATERIALS

- Personnel deployed in support of missions ranging from war to operations other than war may be exposed to harmful chemicals as a result of industrial accidents, sabotage, or the intentional or unintentional actions of enemy or friendly forces.

Example Catastrophic Toxicological or Physical Hazards for Industrial Sites, Balkan States

Central and South America

Argentina
- Belize
- Bolivia
- Brazil
- Chile
- Colombia
- Costa Rica
- Ecuador
- El Salvador
- French Guiana
- Guatemala
- Guyana
- Honduras
- Nicaragua
- Panama
- Paraguay
- Peru
- Suriname
- Uruguay
- Venezuela

West Africa
- Benin
- Burkina Faso
- Cote D'Ivoire
- Gambia
- Ghana
- Guinea
- Guinea-Bissau
- Liberia
- Mali
- Mauritania
- Niger
- Nigeria
- Senegal
- Togo

North Africa
- Algeria
- Egypt
- Libya
- Morocco
- Tunisia
- West Sahara

Middle East
- Cyprus
- Iran
- Jordan
- Kuwait
- Oman
- Qatar
- Republic of Georgia
- Saudi Arabia
- Syria
- Turkey
- UAE
- Yemen

Horn of Africa
- Djibouti
- Eritrea
- Ethiopia
- Kenya
- Somalia
- Sudan
- Uganda

Central Asia
- Tajikistan
- Turkmenistan
- Kazakhstan
- Kyrgyzstan
- Uzbekistan

V1.00

Where do you want to go now?

- Beginning of Briefing
- Back to Medical Threat Briefing Map
- End Presentation!

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